Efficacy of Cognitive Behaviour Therapy (CBT) in Managing Smartphone Addiction, Insomnia and Aggression among Adolescent Boys

Synopsis

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R. Govarthini

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Under the Supervision & Guidance of

Dr. N. V. Amudha Devi

Assistant Professor, Department of Psychology

Avinashilingam Institute for Home Science and Higher Education for Women,

Coimbatore - 641023

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Introduction

The word Adolescence is derived from Latin word “Adolescence” meaning “to grow up” or “to mature”. It is a period between childhood and adulthood that involves a number of changes in body and mind. According to World Health Organization (WHO) defines adolescences as a phase of life between 10-19 years if age characterized by physical growth, emotional, psychosocial and behavioural changes, thus, bringing about transformation from childhood to adulthood.

A smartphone is a cellular telephone with an integrated computer and other features not originally associated with telephones such as an operating system, web browsing, and the ability to run software application. Smartphones can be used by individuals in both a consumer and a business context, and are now almost integral to everyday modern life. A study on smartphone usage among adolescents studied that smartphone usage in primary and secondary schools in Hajdubihar country, Hungary and it relationship with personality traits, sample consisting of 263 samples. Results revealed that an average phone using time is higher at 6.35 hour per day. The smartphone usage shows a significant positive relationship with impulsivity, anxiety and depression, attention deficits and somatic problems within 17-19 ages (Egyetem et al. 2015).

Insomnia is a sleep disorder, that is characterized by difficulty in falling asleep and/or staying sleep. People with insomnia have one or more of the following symptoms., difficulty in falling asleep, waking up during the night and having going back to sleep, waking up too early in the morning, feeling tired upon walking. Insomnia disorder is very common in adolescents. Researchers at Stanford University recently found evidence that disputed the widely held assumption that insomnia occurs predominantly in the adult population. In sleep survey conducted at San Francisco are high school, they found that 13 percent of the participating adolescents suffered from chronic sleep disturbance (Price et al. 1978).

Sleep is essential for health and well-being. But billions of people do not get enough sleep resulting in such problems as daytime sleepiness, poor decision-making, interference with learning and accidents. CBT, which helps to people to identify and change their thoughts and behaviour, can help. In fact, according to one study, CBT does better job to reducing insomnia than sleeping pills. (APA. 2021).

The term aggression refers to a range of behaviours that can result in both physical and psychological harm to yourself, others, or objects in the environment. This type of behaviour centres on harming another person either physically or mentally. A study conducted on Predicting Aggression among Male Adolescent indicates that aggression behaviour can be expressed as a predictor for crime, substance abuse, depression and

academic failure. There are three predicting variables of 1) attitude, 2) subjective norms, and 3) perceived behavioural control, accounted for 40 percent of the variation in the outcome measure of the aggression intention. Besides intention for 15 percent of the variation in the outcome measure of the aggression behaviour (Motlagh et al. 2018).

The Need for the Study

One of the finest inventions of human kind is smartphone which brings people together despite of distances, but now people are getting even more away from each other and spending a lot of time on their smartphones. Smartphone becomes most important gadget in every individual. Almost all people among us owing a smartphone, using it for various purposes. Despite of binding people together, the smartphones make people to turn away from each other at all circumstances. As a continuous usage of smartphone, it leads to many consequences like poor quality of sleep, poor academic performances, poor interpersonal relationship, increased aggression, intolerance.

The current study was to find out the efficacy of cognitive behaviour therapy in managing smartphone addiction, insomnia and aggression among adolescent boys. Cognitive Behaviour Therapy was used effectively to deal with the cognitive techniques, and behavioural techniques. This study mainly concerned with targeting maladaptive thoughts, self-monitoring, thought stopping, relaxation therapy, sleep hygiene, sleep restriction, emotion regulation, reverse counting.

Review of literature

Davey and Davey (2014) conducted a study on Assessment of Smartphone Addiction in Indian Adolescents: A Mixed Method Study by Systematic-Review and Meta-Analysis Approach. The results revealed that the smartphone addiction magnitude in India ranged from 39% to 44%. It also leads not only damage to interpersonal skills, but also it can lead to significant negative health risks and harmful psychological effects on Indian Adolescents.

Roberts, Roberts and Chan (2008) done research on Persistence and Change in Symptoms of Insomnia among Adolescents. The subjects were sampled from large managed care population in a metropolitan area over 4.7 million. The tools used was youth-reported DSM-IV symptom criteria. The results revealed that one year incidence was 13.9% or more symptoms, 5.5% for 1 or more symptoms plus daytime fatigue or sleepiness, and 5.3% for insomnia caseness. Rate of chronicity were 45.8% for 1 or more symptoms, 34.7% with daytime fatigue or sleepiness, and 22.8% for insomnia caseness.

Kumari, Kishore and Mandal (2017) examined a study on A Cross – Sectional Study of Aggression among School Adolescents in Karnataka, India. The sample consists of 187 students were participated in the study. A modified version of direct and indirect aggression scale (DIAS) was used to assess aggression. A significant proportion of adolescents scored very high on aggression scale. Males were found to be more aggressive than females and these results were statistically significant ($p<0.05$)

Objective of the study:

- To find out the Efficacy of Cognitive Behaviour Therapy (CBT) in Managing Smartphone Addiction, Insomnia and Aggression among Adolescent Boys

Hypotheses

- There will be a significant reduction in smartphone addiction among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in insomnia among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in physical aggression among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in verbal aggression among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in anger among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in hostility among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy
- There will be a significant reduction in aggression among adolescent boys during before, after and follow-up phases of cognitive behaviour therapy

Sample

The participants were selected through purposive sampling technique. One hundred fifty students have participated in the study. Finally, 58 students have met the criteria and consented to participate in the study. The students who gave their consent was further taken into the cognitive behaviour therapy intervention program.

Inclusion Criteria

- Students who have scored high in smartphone addiction
- Students who have scored high in insomnia

- Students who have scored above average, high and very high in aggression questionnaire
- Students who are willing to participate in the cognitive behaviour therapy intervention program

Exclusion Criteria

- Students who have scored medium and low in smartphone addiction
- Students who have scored low in insomnia
- Students who have scored average, below average, low and very low in aggression questionnaire
- Students who are not willing to participate in the cognitive behaviour therapy intervention program
- Students who have already undergone similar program were not included in the study

Research Design

The Experimental Research Design Method Before, After and Follow-up without control group design was selected for the present study. A standardized questionnaires made use to collect data. The research was conducted in four phases.

Phase I – Engineering students from various departments were taken part in screening and administration phase of the study. Demographic detail, Smartphone Addiction Scale (Kwon et al, 2013), Insomnia Inventory (The London Sleep Centre, 2004) and Aggression Questionnaire (Buss & Perry, 1992) were the list of questionnaires used to collect the data before administering the Cognitive Behaviour Therapy to Adolescent Boys.

Phase II – Cognitive Behaviour Therapy interventions were administered to the adolescent boys who have scored high in smartphone addiction, insomnia and aggression.

Phase III – After successful completion of Cognitive Behaviour Therapy Intervention Program, the same set of questionnaires were used for the Phase I were re-assessed.

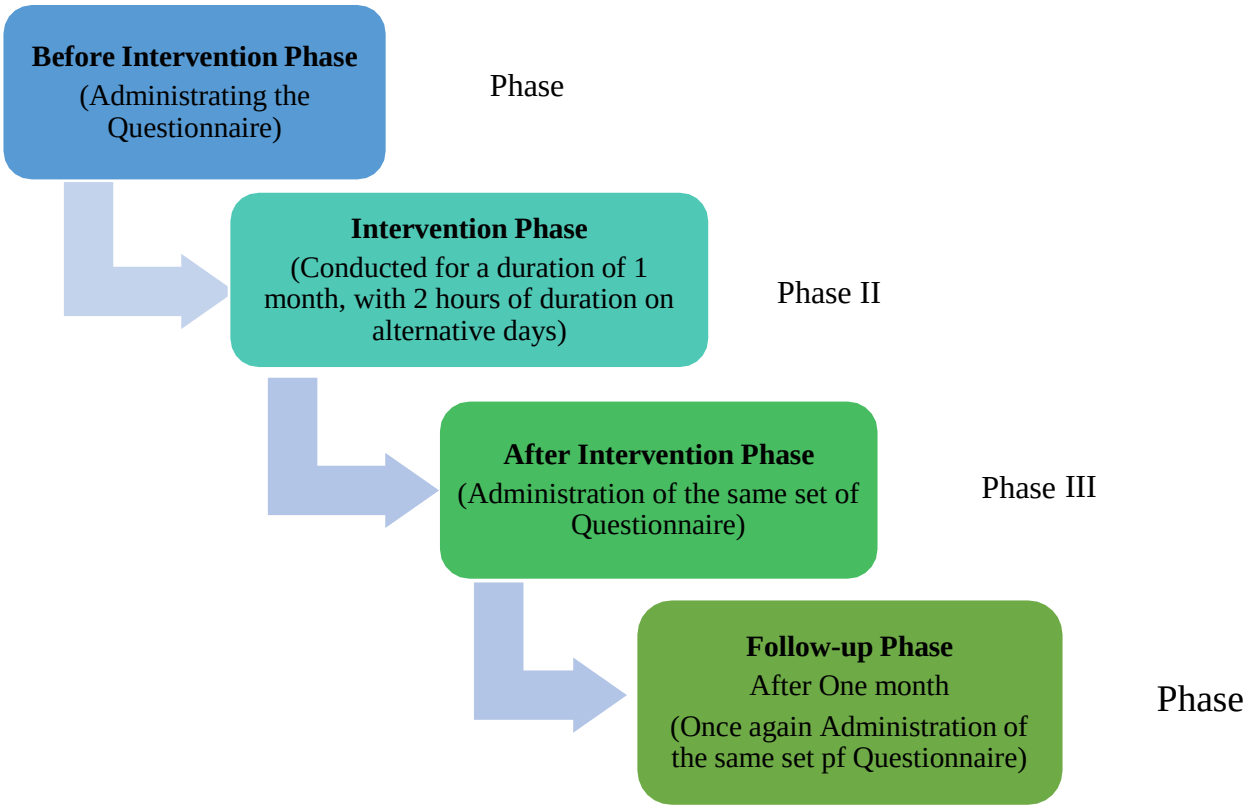
Phase IV – Follow-up session was conducted after a duration of one month of time interval from the After Cognitive Behaviour Therapy Intervention Program.

Cognitive Behaviour Therapy

Cognitive Behaviour Therapy Intervention program was conducted to manage their smartphone addiction, insomnia and aggression in the adolescent boys. This program mainly

depicts the concepts of managing smartphone usage, how to improve the quality of sleep and the managing techniques to reduce the aggression among the participants.

Flow Chart


Before Intervention Phase
(Administrating the Questionnaire)
Phase
Intervention Phase
(Conducted for a duration of 1 month, with 2 hours of duration on alternative days)
Phase II
After Intervention Phase
(Administration of the same set of Questionnaire)
Phase III
Follow-up Phase
After One month
(Once again Administration of the same set pf Questionnaire)
Phase

Statistical Analysis

Mean, Standard Deviation and Repeated Measures ANOVA followed by the Bonferroni Post - hoc analysis examined the efficacy of Cognitive Behavior Therapy (CBT) in Managing Smartphone Addiction, Insomnia and Aggression among Adolescent Boys.

Results

The statistical analysis explored the results of the current study. The Percentage analysis was used to analyze the demographic data of the participants. Repeated Measures ANOVA explored a significant difference in the Before, After, Follow-up experimental phases. F value is less than 0.5% representing the statistical significance among the Before, After and Follow-up experimental phases. Thus, the statistical analysis is persistent by a Post-hoc test.

Descriptive statistics reveals that smartphone addiction of Adolescent Boys. The mean score and standard deviation of smartphone addiction of Adolescent Boys in Before CBT Intervention Program was M=156.31; SD=14.67, in After CBT Intervention Program, the scores of M=86.22; SD=20.39 and in Follow-up the scores obtained was M=81.88; SD=17.48. From the Mean and Standard Deviation recorded during Before, After and Follow-up phases showing a change (decreased smartphone addiction) of 74.43. It is inferred that the Mean and Standard Deviation scores of the smartphone addiction along with the CBT Intervention was found to be effective in reducing the smartphone addiction among the participants.

Descriptive statistics reveals that insomnia of Adolescent Boys. The mean and standard deviation of insomnia of Adolescent Boys in Before CBT Intervention Program was recorded as M=56.21 and SD=15.98, in the After CBT Intervention Program the obtained score with the M=16.38 and SD=4.85 and in the Follow-up the obtained scores was M=14.83 and SD= 5.69. From the results obtained from the Mean and Standard Deviation, which represents that there is a change (reduced the symptoms of insomnia) of -41.38 score obtained from Before, After and Follow-up Phases of CBT Intervention Program.

Descriptive statistics reveals that Physical Aggression of Adolescent Boys. The mean score and standard deviation of physical aggression of Adolescent Boys in Before CBT Intervention Program was obtained as M=64.10 and SD= 5.14. In the After CBT Intervention Program, the mean and standard deviation scores was M=50.98 and SD=2.67. In the Follow-up Phase, the mean and standard deviation scored obtained was M=49.24 and SD=7.39, which showing the change (reduced physical aggression) of 14.86. Descriptive statistics reveals that Verbal Aggression of Adolescent Boys. The mean score and standard deviation of verbal aggression of Adolescent Boys in Before CBT Intervention Program was M=62.62 and SD=2.03, in After CBT Intervention program the scores was M=49.72 and SD=4.23 and in Follow-up the M=47.66 and SD=7.96 with a change (reduced verbal aggression) of 14.96 scored from Before to Follow-up.

Descriptive statistics reveals that Anger of Adolescent Boys. The mean and standard deviation of anger of Adolescent Boys in Before CBT Intervention Program was M=64.62 and SD=6.14, in After CBT Intervention Program the scored obtained was M=49.59 and SD=4.08 and in Follow-up the score of M=48.97 and SD 7.02, which showing the change (reduced anger) of 15.65. Descriptive statistics reveals that Hostility of Adolescent Boys. The mean and standard deviation of hostility of Adolescent Boys in Before CBT Intervention

Program was M=65.78 and SD=5.79, in After CBT Intervention Program M=51.07 and SD=3.32, and in Follow-up the scored obtained was M=48.05 and SD=9.39, which showing a change (reduced hostility) of 17.73 scored from Before to Follow-up Phases of the study.

Descriptive statistics reveals the Aggression of Adolescent Boys. The mean and standard deviation of aggression of Adolescent Boys Before CBT Intervention Program was M=64.31 and SD=7.48, in After CBT Intervention Program the M=47.74 and SD=6.91, and in Follow-up the scores was M=47.43 and SD=4.81 with a changing (reduced aggression) of 16.88 scored from Before to Follow-up Phases of the study.

From the above results obtained from the descriptive statistics it is inferred that the smartphone addiction, insomnia and aggression has seen a significant changes after effective Cognitive Behaviour Therapy Intervention Program. Therefore, it is clear that CBT played a significant role which brought changes in the smartphone addiction, insomnia and aggression of the students.

Repeated Measures ANOVA showed a significant difference in the Before, After and Follow-up experimental phases. F value is less than 0.01% indicating the statistical significance among the Before, After and Follow-up experimental phases. Thus, the statistical analysis continued in the Post-hoc test. Bonferroni Post-hoc test showed a significant reduction in smartphone addiction, insomnia, physical aggression, verbal aggression, anger, hostility and aggression during Before, After and Follow-up. The absence of significant differences in After and Follow-up phases showed the requirement of more psychological assistance in students. Thus, the results showed that there is a need for psychological assistance in the students. Therefore, in future CBT and counselling is recommended to the college students.

Conclusion

Cognitive Behaviour Therapy has helped to Manage the Smartphone Addiction, Insomnia and Aggression among Adolescent Boys.

Implications

- The result shows that CBT can be effective program to help students with psychological and education problems.
- Providing mental health counselling to the students, which helps them to manage their interpersonal and social difficulties.

- The Government of India should take necessary steps for the prevalence of counselling among college students.

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